
****THE EFFECTS OF BEETLE-INDUCED TREE DEATH ON FOREST BIRD DIVERSITY IN WESTERN MONTANA**

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In forest ecosystems, climate change can hinder management success by increasing the frequency and intensity of fire and insect outbreaks that cause massive tree die-offs and abrupt habitat change. Resource managers often use ecological indicators to gain insight into the health and status of ecosystems due to the challenge of monitoring all aspects of any ecosystem. Birds are increasingly identified as appropriate taxa for predicting changes in biodiversity and ecological integrity around the globe. We assessed the effects of bark beetle induced forest die-off on patterns of avian diversity in western Montana. We used songbirds, which are ubiquitous and possess attributes capturing the complexity of forests as ecological indicators. In addition to assessing the effects of bark beetle forest die-off on bird diversity we also sought to examine the relative importance of the “conspecific neighborhood” in influencing species-level occurrence rates at a given survey location. This approach is motivated by the idea that individuals of a species aggregate around resources. It follows, that a species is more likely to occur in a patch surrounded by other occupied patches (the conspecific neighborhood). Incorporating measures of spatial autocorrelation in ecological studies is not new. However, this topic is only just beginning to be applied in the context of more recent analytical advances such as Bayesian multi-species hierarchical models used to estimate species abundance and occurrence rates.